

METHOD OF MANUFACTURING EXPANSILE FILAMENTOUS EMBOLIZATION DEVICES

ABSTRACT OF THE DISCLOSURE

An embolization device for occluding a body cavity includes one or more elongated, 5
expansible, hydrophilic embolizing elements non-releasably carried along the length of an
elongated filamentous carrier that is preferably made of a very thin, highly flexible filament or
microcoil of nickel/titanium alloy. At least one expansile embolizing element is non-releasably
attached to the carrier. A first embodiment includes a plurality of embolizing elements fixed to
the carrier at spaced-apart intervals along its length. In second, third and fourth embodiments, an
10 elongate, continuous, coaxial embolizing element is non-releasably fixed to the exterior surface
of the carrier, extending along a substantial portion of the length of the carrier proximally from a
distal tip, and optionally includes a luminal reservoir for delivery of therapeutic agents. Exem-
plary methods for making these devices include skewering and molding the embolizing elements.
In any of the embodiments, the embolizing elements may be made of a hydrophilic, macro-
15 porous, polymeric, hydrogel foam material. In the second, third and fourth embodiments, the
elongate embolizing element is preferably made of a porous, environmentally-sensitive,
expansile hydrogel, which can optionally be made biodegradable and/or bioresorbable, having a
rate of expansion that changes in response to a change in an environmental parameter, such as the
pH or temperature of the environment.